```
1    AAATTCAGGATAACTCTCCTGAGGGGTGAGCCAAGCCCTGCCATGTAGTGCACGCAGGAC

61   ATCAACAAACACAGATAACAGGAAATGATCCATTCCCTGTGGTCACTTATTCTAAAGGCC

121  CCAACCTTCAAAGTTCAAGTAGTGATATGGATGACTCCACAGAAAGGGAGCAGTCACGCC
1                                    M  D  D  S  T  E  R  E  Q  S  R  L

181  TTACTTCTTGCCTTAAGAAAAGAGAAGAAATGAAACTGAAGGAGTGTGTTTCCATCCTCC
13     T  S  C  L  K  K  R  E  E  M  K  L  K  E  C  V  S  I  L  P

241  CACGGAAGGAAAGCCCCTCTGTCCGATCCTCCAAAGACGGAAAGCTGCTGGCTGCAACCT
33     R  K  E  S  P  S  V  R  S  S  K  D  G  K  L  L  A  A  T  L

301  TGCTGCTGGCACTGCTGTCTTGCTGCCTCACGGTGGTGTCTTTCTACCAGGTGGCCGCCC
53     L  L  A  L  L  S  C  C  L  T  V  V  S  F  Y  Q  V  A  A  L

361  TGCAAGGGGACCTGGCCAGCCTCCGGGCAGAGCTGCAGGGCCACCACGCGGAGAAGCTGC
73     Q  G  D  L  A  S  L  R  A  E  L  Q  G  H  H  A  E  K  L  P

421  CAGCAGGAGCAGGAGCCCCCAAGGCCGGCCTGGAGGAAGCTCCAGCTGTCACCGCGGGAC
93     A  G  A  G  A  P  K  A  G  L  E  E  A  P  A  V  T  A  G  L

481  TGAAAATCTTTGAACCACCAGCTCCAGGAGAAGGCAACTCCAGTCAGAACAGCAGAAATA
113    K  I  F  E  P  P  A  P  G  E  G  N  S  S  Q  N  S  R  N  K

541  AGCGTGCCGTTCAGGGTCCAGAAGAAACAGTCACTCAAGACTGCTTGCAACTGATTGCAG
133    R  A  V  Q  G  P  E  E  T  V  T  Q  D  C  L  Q  L  I  A  D
```

FIG. 1A

```
601  ACAGTGAAACACCAACTATACAAAAAGGATCTTACACATTTGTTCCATGGCTTCTCAGCT
153    S  E  T  P  T  I  Q  K  G  S  Y  T  F  V  P  W  L  L  S  F

661  TTAAAAGGGGAAGTGCCCTAGAAGAAAAAGAGAATAAAATATTGGTCAAAGAAACTGGTT
173    K  R  G  S  A  L  E  E  K  E  N  K  I  L  V  K  E  T  G  Y

721  ACTTTTTTATATATGGTCAGGTTTTATATACTGATAAGACCTACGCCATGGGACATCTAA
193    F  F  I  Y  G  Q  V  L  Y  T  D  K  T  Y  A  M  G  H  L  I

781  TTCAGAGGAAGAAGGTCCATGTCTTTGGGGATGAATTGAGTCTGGTGACTTTGTTTCGAT
213    Q  R  K  K  V  H  V  F  G  D  E  L  S  L  V  T  L  F  R  C

841  GTATTCAAAATATGCCTGAAACACTACCCAATAATTCCTGCTATTCAGCTGGCATTGCAA
233    I  Q  N  M  P  E  T  L  P  N  N  S  C  Y  S  A  G  I  A  K

901  AACTGGAAGAAGGAGATGAACTCCAACTTGCAATACCAAGAGAAAATGCACAAATATCAC
253    L  E  E  G  D  E  L  Q  L  A  I  P  R  E  N  A  Q  I  S  L

961  TGGATGGAGATGTCACATTTTTTGGTGCATTGAAACTGCTGTGACCTACTTACACCATGT
273    D  G  D  V  T  F  F  G  A  L  K  L  L

1021 CTGTAGCTATTTTCCTCCCTTTCTCTGTACCTCTAAGAAGAAAGAATCTAACTGAAAATA

1081 CCAAAAAAAAAAAAAAAAAA
```

FIG.1B

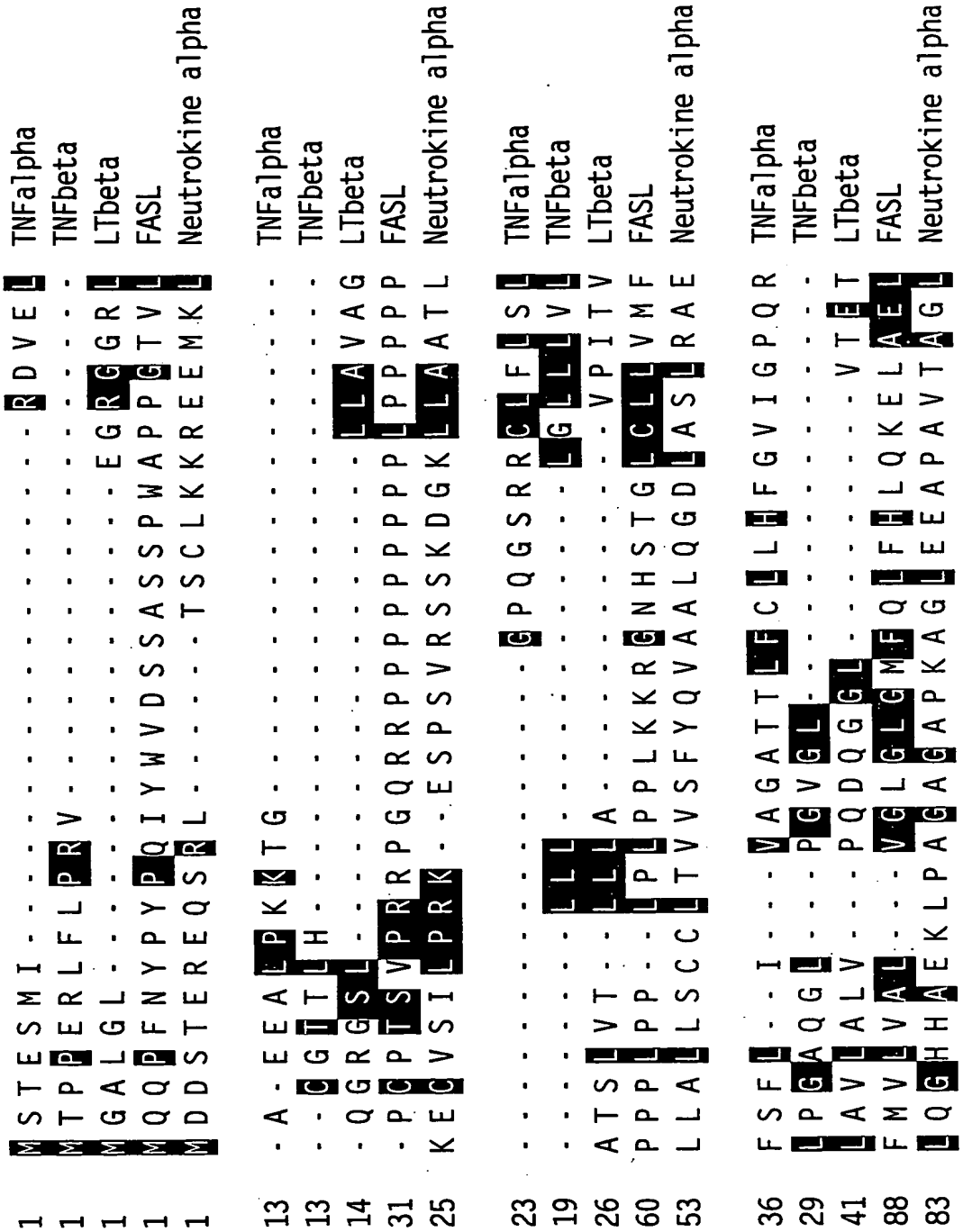

FIG.2A

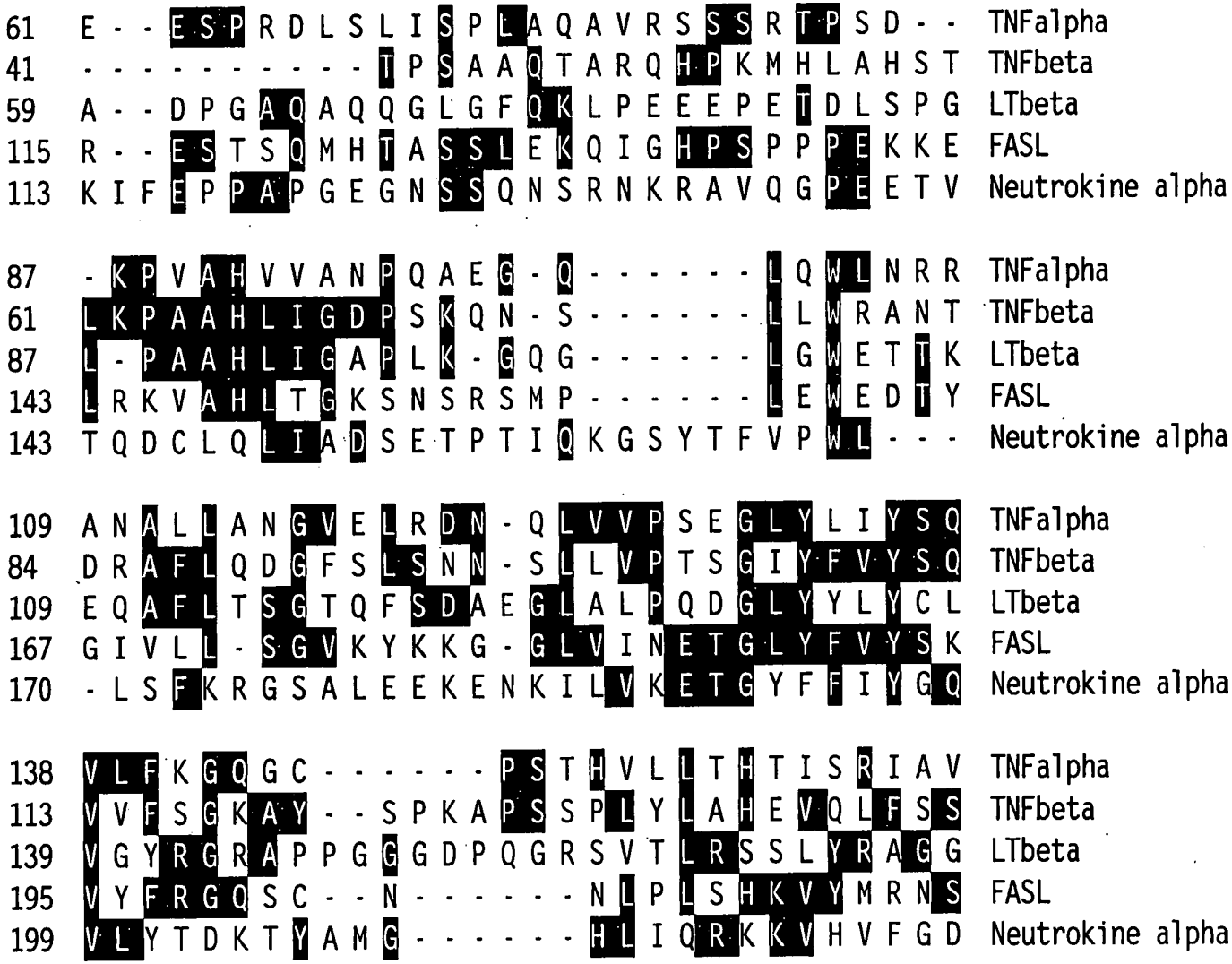
61 E--ESPRDLSLISPLAQAVRSSSRTPSD-- TNFalpha
41 ----------TPSAAQTARQHPKMHLAHST TNFbeta
59 A--DPGAQAQQGLGFQKLPEEEPETDLSPG LTbeta
115 R--ESTSQMHTASSLEKQIGHPSPPEKKE FASL
113 KIFEPPAPGEGNSSQNSRNKRAVQGPETV Neutrokine alpha
87 -KPVAHVVANPQAEG-Q------LQWLNRR TNFalpha
61 LKPAAHLIGDPSKQN-S------LLWRANT TNFbeta
87 L-PAAHLIGAPLK-GQG------LGWETTK LTbeta
143 LRKVAHLTGKSNSRSMP------LEWEDTY FASL
143 TQDCLQLIADSETPTIQKGSYTFVPWL--- Neutrokine alpha
109 ANALLANGVELRDN-QLVVPSEGLYLIYSQ TNFalpha
84 DRAFLQDGFSLSNN-SLLVPTSGIYFVYSQ TNFbeta
109 EQAFLTSGTQFSDAEGLALPQDGLYYLYCL LTbeta
167 GIVLL-SGVKYKKG-GLVINETGLYFVYSK FASL
170 -LSFKRGSALEEKENKILVKETGYFFIYGQ Neutrokine alpha
138 VLFKGQGC------PSTHVLLTHTISRIAV TNFalpha
113 VVFSGKAY--SPKAPSSPLYLAHEVQLFSS TNFbeta
139 VGYRGRAPPGGGDPQGRSVTLRSSLYRAGG LTbeta
195 VYFRGQSC--N------NLPLSHKVYMRNS FASL
199 VLYTDKTYAMG------HLIQRKKVHVFGD Neutrokine alpha

FIG.2B

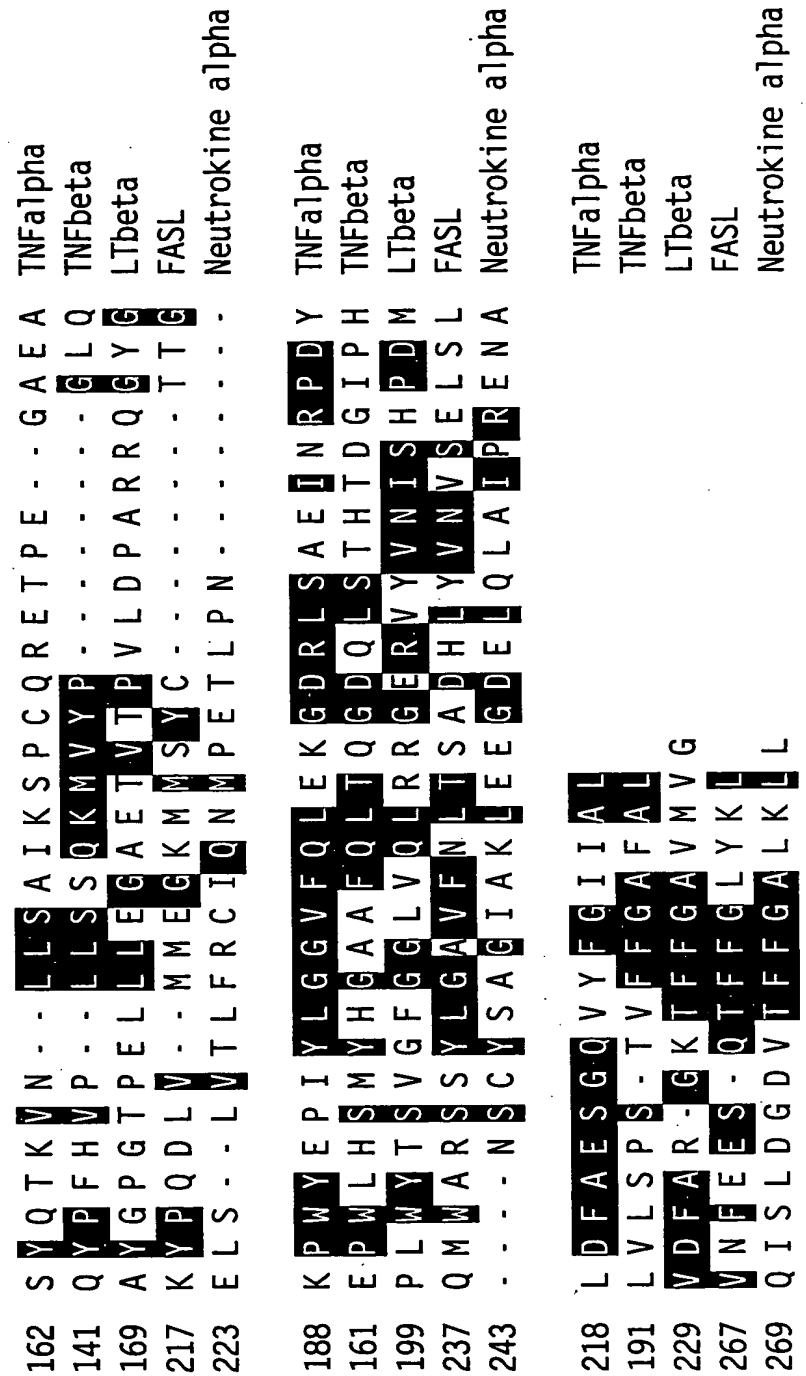
162 SYQTKVN--LLSAIKSPCQRETPE--GAEA TNFalpha
141 QYPFHVP--LLSSQKMVYP----------GLQ TNFbeta
169 AYGPGTPELLEGAETVTPVLDPARRQGYGG LTbeta
217 KYPQDLV--MMEGKMMSYC----------TTG FASL
223 ELS--LVTLFRCIQNMPETLPN---------- Neutrokine alpha
188 KPWYEPIYLGGVFQLEKGDRLSAEINRPDY TNFalpha
161 EPWLHSMYHGAAFQLTQGDQLSTHTDGIPH TNFbeta
199 PLWYTSSVGFGGLVQLRRGERVYVNISHPDM LTbeta
237 QMMARSSYLGAVFNLTSADHLYVNVSELSL FASL
243 ----NSCYSAGIAKLEEGDELQLAIPRENA Neutrokine alpha
218 LDFAESGQVYFGIIAL TNFalpha
191 LVLSPS-TVFFGAFAL TNFbeta
229 VDFAR-GKTFFGAVMVG LTbeta
267 VNFEES-QTFFGLYKL FASL
269 QISLDGDVTFFGALKLL Neutrokine alpha

FIG.2C

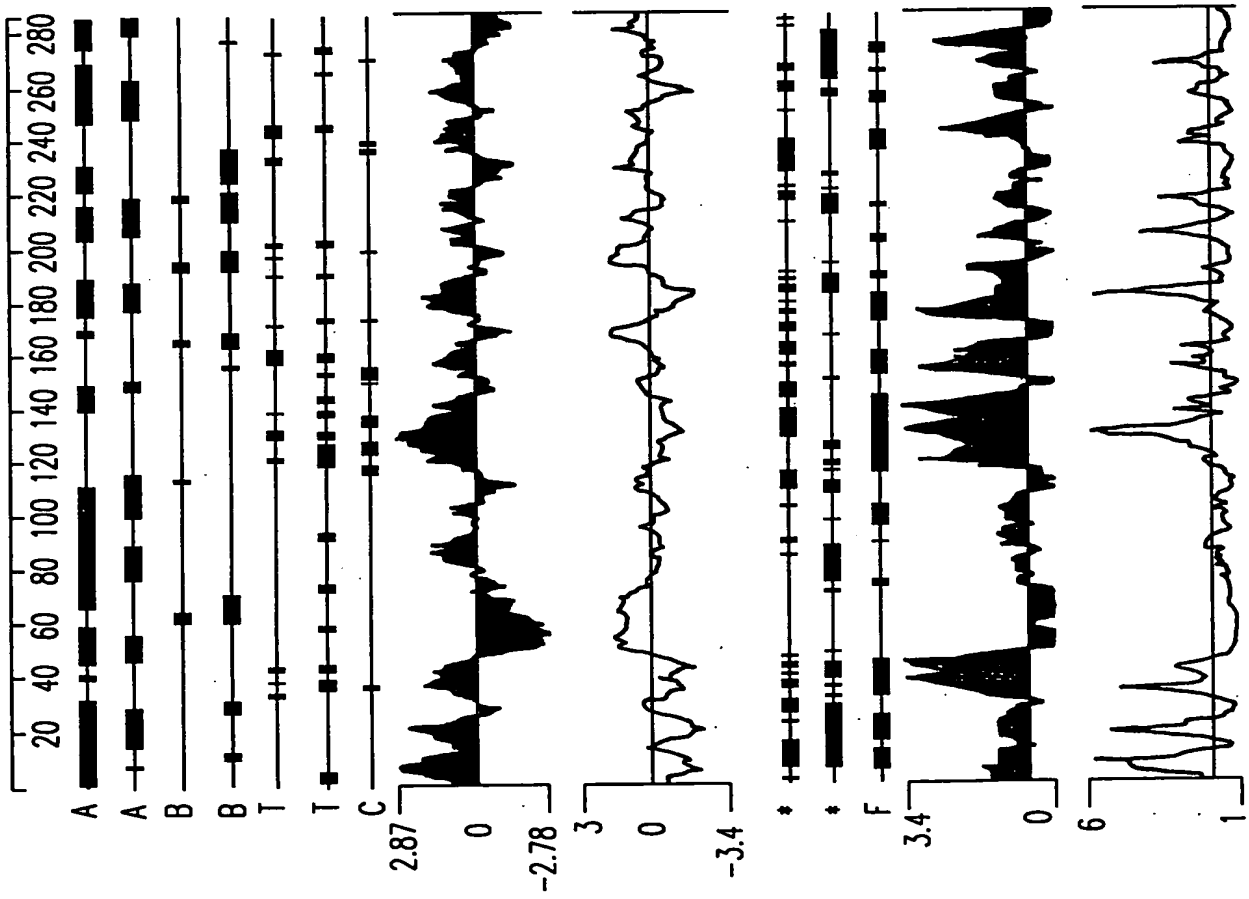
20 40 60 80 100 120 140 160 180 200 220 240 260 280
A
A
B
B
T
T
C
ALPHA, REGIONS-GARNIER-ROBSON
ALPHA, REGIONS-CHOU-FASMAN
BETA, REGIONS-GARNIER-ROBSON
BETA, REGIONS-CHOU-FASMAN
TURN, REGIONS-GARNIER-ROBSON
TURN, REGIONS-CHOU-FASMAN
COIL, REGIONS-GARNIER-ROBSON
HYDROPHILICITY PLOT-KYTE-DOOLITTLE
2.87
0
-2.78
HYDROPHOBICITY PLOT-HOPP-WOODS
3
0
-3.4
ALPHA, AMPHIPATHIC REGIONS-EISENBERG
BETA, AMPHIPATHIC REGIONS-EISENBERG
FLEXIBLE REGIONS-KARPLUS-SCHULZ
F
3.4
0
ANTIGENIC INDEX-JAMESON-WOLF
6
1
SURFACE PROBABILITY PLOT-EMINI

FIG.3

```
          1                                                   50
HSOAD55R  .........A GGNTAACTCT CCTGAGGGGT GAGCCAAGCC CTGCCATGTA
HNEDU15X  ...AAATTCA GGATAACTCT CCTGAGGGGT GAGCCAAGCC CTGCCATGTA
HSLAH84R  .AATTCGGCA NAGNAAACTG GTTACTTTTT TATATATGGT CAGGTTTTAT
HLTBM08R  AATTCGGCAC GAGCAAGGCC GGCCTGGAGG AAGCTCCAGC TGTCACCGCG

          51                                                  100
HSOAD55R  GTGCACGCAG GACATCANCA A..ACACANN NNNCAGGAAA TAATCCATTC
HNEDU15X  GTGCACGCAG GACATCAACA A..ACACAGA TAACAGGAAA TGATCCATTC
HSLAH84R  ATACTGATAA GACCTACGCC ATGGGACATC TAGTTCAGAG GAAGAAGGTC
HLTBM08R  GGACTGAAAA TCTTTGAACC ACCAGCTCCA GGAGAAGGCA ACTCCAGTCA

          101                                                 150
HSOAD55R  CCTGTGGTCA CTTATTCTAA AGGCCCCAAC CTTCAAAGTT CAAGTAGTGA
HNEDU15X  CCTGTGGTCA CTTATTCTAA AGGCCCCAAC CTTCAAAGTT CAAGTAGTGA
HSLAH84R  CATGTCTTTG GGGATGAATT GAGTCTGGTG ACTTTGTTTC GATGTATTCA
HLTBM08R  GAACAGCAGA AATAAGCGTG CCGTTCAGGG TCCAGAAGAA ACAGTCACTC

          151                                                 200
HSOAD55R  TATGGATGAC TCCACAGAAA GGGAGCAGTC ACGCCTTACT TCTTGCCTTA
HNEDU15X  TATGGATGAC TCCACAGAAA GGGAGCAGTC ACGCCTTACT TCTTGCCTTA
HSLAH84R  AAATATGCCT GAAACACTAC CCAATAATTC CTGCTATTCA GCTGGCATTG
HLTBM08R  AAGACTGCTT GCAACTGNTT GCAGACAGTG AAACACCAAC TATACAAAAA

          201                                                 250
HSOAD55R  AGAAAAGAGA AGAAATGAAA CTGNAAGGAG TGTGTTTCCA TCCTCCCACG
HNEDU15X  AGAAAAGAGA AGAAATGAAA CT.GAAGGAG TGTGTTTCCA TCCTCCCACG
HSLAH84R  CAAAACTGGN AGGAAGGA.. ...GATGAAC TCCAACTTGC AATACCAGGG
HLTBM08R  GGCTCCCTTC TGNTGCCACA TTTGGGCCAA GGAATGGAGA GATTTCTTCG

          251                                                 300
HSOAD55R  GAAGGAAAGC CCCTCTNTCC GATCCTCCAA AGACGGAAAG CTGCTGGCTG
HNEDU15X  GAAGGAAAGC CCCTCTGTCC GATCCTCCAA AGACGGAAAG CTGCTGGCTG
HSLAH84R  GAAAATGCAC AATTATCACT GGGATGGAGA TGTTCACATT TTTTGGGTGC
HLTBM08R  TCTGGAAACA TTTTGCCAAA CTCTTCAGAT ACTCTTTNCT CTCTGGGAAT

          301                                                 350
HSOAD55R  CAACCTTGNT GNTGGCATTG TGTTCTTGCT GNCTCAAGGT GGTGTTNTT.
HNEDU15X  CAACCTTGCT GCTGGCACTG CTGTCTTGCT GCCTCACGGT GGTGTCTTTC
HSLAH84R  CATTGAAACT GCTGTGACCT NCTTACANCA NGTGCTGTTN GCTATTTTNC
HLTBM08R  CAAAGGAAAA TCTCTACTTA GATTNACACA TTTGTTCCCA TGGGTNTCTT

          351                                                 400
HSOAD55R  .......... .......... .......... .......... ..........
HNEDU15X  TACCAGGTGG CCGCCCTGCA AGGGGACCTG GCCAGCCTCC GGGCAGAGCT
HSLAH84R  CTNCCTNTTC TNTGGTAACC TCTTAGGAAG GAAGGATTCT TAACTGGGAA
HLTBM08R  AAGTTTTAAA AGGGGAGTGC CCTTAGGAGG AAAAGGGGAT AAATATTGGC
```

FIG.4A

```
          401                                                    450
HSOAD55R  .......... .......... .......... .......... ..........
HNEDU15X  GCAGGGCCAC CACGCGGAGA AGCTGCCAGC AGGAGCAGGA GCCCCCAAGG
HSLAH84R  ATAACCCAAA AAAANNTTAA ANGGGTANGN GNNANANGNG GGGNNGTTNN
HLTBM08R  CAAGGNACTG GTTANTTTNT AAATATGGTC AGGTTTNTAT ANCTGGTAGG

          451                                                    500
HSOAD55R  .......... .......... .......... .......... ..........
HNEDU15X  CCGGCCTGGA GGAAGCTCCA GCTGTCACCG CGGGACTGAA AATCTTTGAA
HSLAH84R  CNNGNNGNNT TTTNGGNNTA TNTTNTNNTN GGGNNNNGTA AAAATGGGGC
HLTBM08R  CCTCGCCATG GGCATTNATT CANGGNGAGG NCNNTCTTTT GGGNTGA...

          501                                                    550
HSOAD55R  .......... .......... .......... .......... ..........
HNEDU15X  CCACCAGCTC CAGGAGAAGG CAACTCCAGT CAGAACAGCA GAAATAAGCG
HSLAH84R  CNANGGGGGN TTTTT..... .......... .......... ..........
HLTBM08R  .......... .......... .......... .......... ..........

          551                                                    600
HSOAD55R  .......... .......... .......... .......... ..........
HNEDU15X  TGCCGTTCAG GGTCCAGAAG AAACAGTCAC TCAAGACTGC TTGCAACTGA
HSLAH84R  .......... .......... .......... .......... ..........
HLTBM08R  .......... .......... .......... .......... ..........

          601                                                    650
HSOAD55R  .......... .......... .......... .......... ..........
HNEDU15X  TTGCAGACAG TGAAACACCA ACTATACAAA AAGGATCTTA CACATTTGTT
HSLAH84R  .......... .......... .......... .......... ..........
HLTBM08R  .......... .......... .......... .......... ..........

          651                                                    700
HSOAD55R  .......... .......... .......... .......... ..........
HNEDU15X  CCATGGCTTC TCAGCTTTAA AAGGGGAAGT GCCCTAGAAG AAAAAGAGAA
HSLAH84R  .......... .......... .......... .......... ..........
HLTBM08R  .......... .......... .......... .......... ..........

          701                                                    750
HSOAD55R  .......... .......... .......... .......... ..........
HNEDU15X  TAAAATATTG GTCAAAGAAA CTGGTTACTT TTTTATATAT GGTCAGGTTT
HSLAH84R  .......... .......... .......... .......... ..........
HLTBM08R  .......... .......... .......... .......... ..........

          751                                                    800
HSOAD55R  .......... .......... .......... .......... ..........
HNEDU15X  TATATACTGA TAAGACCTAC GCCATGGGAC ATCTAATTCA GAGGAAGAAG
HSLAH84R  .......... .......... .......... .......... ..........
HLTBM08R  .......... .......... .......... .......... ..........
```

FIG.4B

```
            801                                                  850
HSOAD55R    .......... .......... .......... .......... ..........
HNEDU15X    GTCCATGTCT TTGGGGATGA ATTGAGTCTG GTGACTTTGT TTCGATGTAT
HSLAH84R    .......... .......... .......... .......... ..........
HLTBM08R    .......... .......... .......... .......... ..........

            851                                                  900
HSOAD55R    .......... .......... .......... .......... ..........
HNEDU15X    TCAAAATATG CCTGAAACAC TACCCAATAA TTCCTGCTAT TCAGCTGGCA
HSLAH84R    .......... .......... .......... .......... ..........
HLTBM08R    .......... .......... .......... .......... ..........

            901                                                  950
HSOAD55R    .......... .......... .......... .......... ..........
HNEDU15X    TTGCAAAACT GGAAGAAGGA GATGAACTCC AACTTGCAAT ACCAAGAGAA
HSLAH84R    .......... .......... .......... .......... ..........
HLTBM08R    .......... .......... .......... .......... ..........

            951                                                 1000
HSOAD55R    .......... .......... .......... .......... ..........
HNEDU15X    AATGCACAAA TATCACTGGA TGGAGATGTC ACATTTTTTG GTGCATTGAA
HSLAH84R    .......... .......... .......... .......... ..........
HLTBM08R    .......... .......... .......... .......... ..........

            1001                                                1050
HSOAD55R    .......... .......... .......... .......... ..........
HNEDU15X    ACTGCTGTGA CCTACTTACA CCATGTCTGT AGCTATTTTC CTCCCTTTCT
HSLAH84R    .......... .......... .......... .......... ..........
HLTBM08R    .......... .......... .......... .......... ..........

            1051                                                1100
HSOAD55R    .......... .......... .......... .......... ..........
HNEDU15X    CTGTACCTCT AAGAAGAAAG AATCTAACTG AAAATACCAA AAAAAAAAAA
HSLAH84R    .......... .......... .......... .......... ..........
HLTBM08R    .......... .......... .......... .......... ..........

            1101
HSOAD55R    ......
HNEDU15X    AAAAAA
HSLAH84R    ......
HLTBM08R    ......
```

FIG.4C